

WHAT IS CLAIMED IS:

1. A branching unit for joining power feed lines of at least three submarine cables, comprising:

5 first, second, and third cable terminations each coupled to a power feed line of a respective submarine cable;

a ground termination;

a current limiter positioned in series between the ground termination and sea earth; and

10 first, second, and third high-voltage relays each having a coil and a contact, the coil of each high-voltage relay being positioned between two of the cable terminations respectively and having an energized state when a threshold amount of current passes through the coil and a de-energized state when the threshold amount of current does not pass through the coil, the contact of each high-voltage relay being
15 positioned to connect the respective third cable termination with the ground termination when the respective coil is in an energized state and to connect the respective third cable termination with at least another of the cable terminations when the respective coil is in a de-energized state.

20 2. The branching unit of claim 1, wherein the first, second, and third high-voltage relays each further comprise a second contact being positioned to de-couple one of the two cable terminations from the third cable termination when the respective coil is in an energized state.

25 3. The branching unit of claim 1, wherein the first, second, and third high-voltage relays are arranged between the cable terminations in a delta network.

30 4. The branching unit of claim 1, wherein the respective terminations have at least one zener diode arranged in parallel with the first, second, and third high-voltage relays.

5. The branching unit of claim 1, wherein the first, second, and third high-voltage relays further comprise a diode bridge surrounding the coil.

35 6. The branching unit of claim 1, wherein the current limiter comprises an inductor.

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7. The branching unit of claim 6, wherein the inductor comprises an air bobbin.

5 8. The branching unit of claim 6, wherein the current limiter further comprises at least one resistor in parallel with the inductor.

9. The branching unit of claim 6, wherein the inductor has an inductance of greater than 100 μ H.

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10. The branching unit of claim 9, wherein the inductor has an inductance of greater than 1 mH.

11. A branching unit for joining power feed lines of at least three submarine cables, comprising:

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first, second, and third cable terminations each coupled to a power feed line of a respective submarine cable;

a ground termination;

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a current limiter positioned in series between the ground termination and sea earth; and

a switching apparatus positioned between the first, second, and third cable terminations and the ground termination, the apparatus causing the third cable termination to connect with the ground termination when a threshold amount of current flows between the first and second cable terminations.

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12. Underwater optical telecommunication link comprising:

at least three submarine cables extended at least partly in a body of water and having first, second and third power feed terminations at respective landing points, each cable comprising at least an optical fiber and a power feed line electrically connected to the respective power feed termination;

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at least two power stations at the landing points to feed said power feed lines of the submarine cables; and

a branching unit in said body of water for joining said power feed lines of said submarine cable, wherein the branching unit comprises:

first, second, and third cable terminations each coupled to a power feed line of a respective submarine cable;

a ground termination;

- 5 a current limiter positioned in series between the ground termination and sea earth; and

a switching apparatus positioned between the first, second, and third cable terminations and the ground termination, the apparatus causing the third cable termination to connect with the ground termination when a threshold amount of current flows between the first and second cable terminations.

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